

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

SPECIAL PROVISION

PROJECT No.

P.I. No.

Add the following:

SECTION 572 – SLOPE UNDERDRAINS

572.1 General Description

This Work consists of the construction of slope underdrains, including placement of Geogrid reinforcement, Geocomposite wall drains, plastic filter fabric and other materials in slope excavations or fills where high groundwater is encountered. Perform this Work in accordance with the Specifications and in reasonable close conformity to the details, lines and grades shown on the Plans, or as directed by the Engineer.

572.2 Materials

Use materials that meet the requirements of the following Specifications:

Polyethylene (PE) Plastic Corrugated Underdrain Pipe [Section 839](#)
Aggregate for Geocomposite Wall Drains [Sub-Section 806.1](#)
Geogrid Reinforcement.....[Section 809](#)
Plastic Filter Fabric.....[Sub-Section 881.2.05](#)
Concrete Flume, Type B.....[Section 500](#)

Use a Geocomposite Wall Drain selected from the Department's Qualified Product List No. 47.

572.3 Construction Requirements

572.3.01 Personnel

General Provisions 101 through 150.

572.3.02 Equipment

General Provisions 101 through 150.

572.3.03 Preparation

General Provisions 101 through 150.

572.3.04 Fabrication

General Provisions 101 through 150.

572.3.05 Construction

SECTION 572 – SLOPE UNDERDRAINS

Arrange the work schedule so that the slope underdrain installations will coincide with other operations on the Project in a manner that will prevent conflict, damage or soil contamination of materials.

A. Excavation:

Excavate in accordance with the details and elevations shown on the Plans or to an increased depth if directed by the Engineer to intercept the water-bearing strata. Begin the excavations with the topmost bench and proceed to the bottom of the slope. Make sufficient excavations with slope underdrains to provide continuous coverage from the top of the water-bearing strata to the bottom of the slope. When unstable conditions are encountered in the bottom of the excavation, remove unstable material as directed by the Engineer and replace with approved granular material and compact so as to provide a stable foundation for the excavation and pipes.

B. Placement of Geocomposite Wall Drains:

Place the Geocomposite wall drains the full height and width of the vertical bench cuts and secure the drains with metal staples or wooden stakes. Do not create any horizontal joints or splices in the drains. Abut adjoining drain strips to make vertical joints between drain strips.

C. Placement of Plastic Filter Fabric:

Place plastic filter fabric of sufficient length to cover the drainage aggregate at the bottom of the bench excavation adjacent to the geocomposite wall drain. Overlap the fabric with a minimum of 3 feet (914 mm) of overlap. Sewing of the fabric will not be required. The fabric may be cut at the locations of the solid underdrain pipe to allow for wrapping around the drainage aggregate.

D. Placement of Pipe and Aggregate:

Place perforated pipe continuous with the bench excavation adjacent to the Geocomposite wall drain in accordance with the details shown on the Plans. Place solid pipe at 200-foot (61-meter) intervals with a minimum of 2 solid pipes at each bench excavation, joined to perforated pipe with “T” connections. Connect all joints securely. Place drainage aggregate to a level of 6 inches (152 mm) above the pipes without disturbing the pipe alignment. Wrap the plastic filter fabric over the drainage aggregate prior to backfilling with soil.

E. Backfilling and Placement of Geogrid Reinforcement:

Place soil to be used as backfill material with the same lift and compaction requirements as normal embankment construction. Do not disturb the pipe alignment. Place layers of Type B geogrid reinforcement 4 feet (1.22 m) long beginning at a level 2 feet (600 mm) above the bottom of each bench, and at 1-foot (300 mm) intervals thereafter as each bench excavation is backfilled.

F. Markers:

Mark each outlet end of the drainage pipe in accordance with Plan details.

G. Protection from Contamination:

Protect all materials from contamination by foreign matter. In the event that the drainage aggregates, plastic filter fabric or Geocomposite wall drains become contaminated, remove the contaminated portion and replace with clean material at no additional cost to the Department. Placement of soil backfill over the fabric is incidental to the Work and is not considered to be contamination.

H. Concrete Flume:

After the slope is backfilled, construct a Type B concrete flume at each solid drain location as indicated on the Plans. Extend each flume from the topmost solid drain pipe to the bottom of the slope.

572.4 Measurement

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Slope underdrains will be measured for payment by the linear foot (meter) of accepted perforated underdrain in place at each bench excavation. No separate measurement will be made for bench excavation, drainage aggregate, Geocomposite wall drain, solid drain pipe, connections, concrete flumes, geogrid, plastic filter fabric, or backfill required by the Plan Details.

Additional depth bench excavation required beyond the limits of the Plan details, and directed by the Engineer, will be measured according to [Subsection 205.4](#) of the Specifications.

No separate measurement will be made for disposing of any unsuitable material encountered. Replacement material will not be measured separately.

When the contract includes Item 210-Grading Complete, additional depth bench excavation required beyond the limits of the Plan details, and as directed by the Engineer, will be measured according to [Subsection 210.4.C](#). of the Specifications. No separate measurement will be made for backfilling the additional depth bench excavation.

572.5 Payment

Slope underdrains will be paid for at the Contract Price per linear foot (meter), complete and in place. Payment is full compensation for excavation, furnishing all materials, including drainage aggregate, Geocomposite wall drain, solid drain pipe, perforated drain pipe, connections, concrete flumes, geogrid and plastic filter fabric, backfill, placing all materials and for all labor, equipment, tools and incidentals necessary to perform the Work.

Additional depth bench excavation required beyond the limits of the Plan details, and as directed by the Engineer, will be paid for as undercut at the Contract Price per cubic yard for Unclassified Excavation.

When the contract includes Item 210-Grading Complete, additional depth bench excavation will be paid for according to [Subsection 210.5.C. “Undercut Excavation”](#).

Payment for work under Section 572 will be made under:

Item No. 572	Slope Underdrains	Per linear foot (meter)
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